

What Is Claimed Is:

1. A method to determine the spin-up parameters of a spindle motor in a disk drive including the steps of:
  - determining the temperature of the VCM; and
  - using the temperature of the VCM to determine the spin-up parameters of the spindle motor.
2. The method of claim 1 wherein the spin-up parameters include one or more of:
  - a. spin-up time;
  - b. spin-up current;
  - c. spin-up voltage; and
  - d. commutation time.
3. The method of claim 1, wherein the step of determining the temperature comprises measuring resistance of a coil of the VCM.
4. The method of claim 1, further comprising the step of setting a time out period after which the spindle motor is turned off if it has not reached a desired operation velocity, wherein the time out period is increased with a decrease in the temperature.

5. A method to determine the spin-up parameters of a spindle motor in a disk drive including the step of:

using the temperature of the VCM to determine the spin-up parameters of the spindle motor.

6. The disk drive of claim 5 wherein the spin-up parameters include one or more of:

- a. spin-up time;
- d. spin-up current;
- e. spin-up voltage; and
- d. commutation time.

7. A method to control start up in a disk drive, the method comprising the steps of:

measuring a resistance of a coil in a voice coil motor (VCM) of the disk drive;

determining a temperature of the coil of the VCM based on the measured resistance; and

increasing the torque applied during startup to correspond with a decrease in the temperature determined.

8. The method of claim 7, wherein the step of increasing torque comprises increasing current levels applied to coil windings of the spindle motor.

9. The method of claim 7, wherein the step of increasing torque comprises increasing voltage levels applied to coil windings of the spindle motor.

10. The method of claim 7, wherein the step of increasing torque comprises controlling a sequence of commutation states applied to windings of the spindle motor during startup.

11. The method of claim 7, wherein the step of increasing torque comprises controlling timing of signals applied to coil windings of the spindle motor.

12. The method of claim 7, further comprising the step of setting a time out period after which the spindle motor is turned off if it has not reached a desired operation velocity, wherein the time out period is increased with a decrease in the temperature.

13. A method to control start up in a disk drive, the method comprising the steps of:

measuring a resistance of a coil in a voice coil motor (VCM) of the disk drive;

determining a temperature of the coil of the VCM based on the measured resistance;

determining a time out period after which the disk drive should be powered down if a spindle motor has not reached a desired operational velocity, wherein the timeout period is increased with a decrease in the determined temperature;

detecting whether the spindle motor reaches the operational velocity within the time out period; and

providing a startup failure signal to enable power down of the spindle motor when the spindle motor does not reach the desired operational velocity within the time out period.

14. The method of claim 13, further comprising the step of:

setting current levels to apply to coil windings of the spindle motor during startup of the spindle motor, the current levels being set to increase the torque applied during startup to correspond with a decrease in the temperature estimate.

15. The method of claim 13, further comprising the step of:

applying a sequence of voltages to coil windings of the spindle motor to generate a torque to cause movement of the spindle motor, wherein the torque

generated has an increased value corresponding with a decrease in the temperature estimate.

16. The method of claim 13, further comprising the step of:

applying a sequence of commutation states to coil windings of the spindle motor during startup to generate a torque to cause movement of the spindle motor, wherein the torque generated by the sequence of commutation states has an increased value corresponding with a decrease in the temperature estimate.

17. The method of claim 13, further comprising the step of:

controlling timing of signals applied to coil windings of the spindle motor to generate a torque to cause movement of the spindle motor, wherein the torque generated by the sequence of commutation states has an increased value corresponding with a decrease in the temperature estimate.